HALM – Hydro-Acoustic Lift Model

Original First Publication – Complete Technical Edition (English)

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Methodology: Captain & First Mate™

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1. Authorship & Independence Clause

This document constitutes the **first publication** of the Hydro-Acoustic Lift Model (HALM).
All fourteen hypotheses (NH1–NH14) were **independently formulated** by:

Jimmy Glenn Nilsson (2025)
Alingsås, Sweden

Critical Legal Principle:

> **Every hypothesis NH1–NH14 is independent.**
> **If one hypothesis is disproven, all remaining hypotheses remain valid, original, and credited to Nilsson, Jimmy G.**

This clause MUST appear in all future citations.

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2. Executive Summary

HALM describes the ancient pyramids as **closed hydro-acoustic lifting machines**, powered by the **Ahramat River** through a buried 2×2 m construction channel that created a stable hydraulic head (Δh).
The system uses **Nile silt (Siltje Effect)**, **self-oscillating check-valves**, **water-hammer pulses**, **resonance (3 → 69 → 82–85 Hz)**, **stepwise hydraulic lifting**, and **lunar phase modulation** to raise multi-ton blocks.

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3. System Description (Complete)

1. **Ahramat River served as the primary hydraulic energy source.**

2. A **2×2 m buried construction channel** between the pyramid base and Ahramat River created a positive hydraulic head (Δh), independent of absolute elevation.

3. **Siltje Effect:** Nile silt reduced effective block weight by ~50% + reduced friction + sealed the lift shaft.

4. A **self-oscillating check valve** inside a bottom chamber generated a pulse of **3–5 Hz** and water-hammer overpressure.

5. **1×1 m shafts** acted as:
   – return-flow channels
   – quarter-wave resonators (~69 Hz)

6. The **Antechamber** functioned as a Helmholtz resonator (~82–85 Hz, Q≈5).

7. These created a **resonance chain**:
   3 Hz → 69 Hz → 82–85 Hz

8. Blocks were lifted **20–40 cm per pulse**.

9. All construction shafts/basins were **back-filled from top to bottom** after the build → explains absence of evidence.

10. **Casing stones** were mounted internally from the top down.

11. The system was partly regulated by **moon phases** (New moon → Full moon → Waning moon).

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4. Nilsson Hypotheses NH1–NH14 (All on One Page, Complete)

NH1 – Ahramat River as the primary hydraulic energy input

First hypothesis to define the river as an energy-producing force, not just transport.

NH2 –The Construction Channel Creates Δh

A buried channel produces stable hydraulic pressure even with small river level changes.

NH3 – The Siltje Effect

Nile silt reduces weight, friction, and seals shafts.
80 tons → effective ~38–40 tons.

NH4 – Self-Oscillating Check Valve (3–5 Hz) pulses and water-hammer overpressure.

NH5 – Chamber Volume Controls Natural Frequency

The system’s natural frequency is determined by the chamber volume, the hydraulic mass-flow, and the effective aperture geometry.

NH6 – 1×1 m Shafts as Return-Flow Resonators

The 1×1 m shafts served a dual hydraulic–acoustic function, acting both as return-flow channels and as tuned quarter-wave resonators.

NH7 – 69 Hz Quarter-Wave Resonance

Derived from shaft length ≈ 1.2–1.3 m.

NH8 – Antechamber Helmholtz Resonance (82–85 Hz)

High-frequency amplification with Q≈5.

NH9 – Resonance Chain (3 → 69 → 82–85 Hz)

First cross-domain model linking hydraulic pulse → acoustic stages.

NH10 – Blocks were lifted in stepwise increments during each hydraulic-acoustic pulse cycle.

Based on hydraulic overpressure and silt flotation.

Above the upper chamber, block dimensions decrease progressively, consistent with the reduced hydraulic energy required at higher lift stages.

NH11 – Temporary Shafts & Basins Filled from Top-Down

Explains near-total archaeological invisibility.

NH12 – Casing stones were placed internally from the top downward, supported by hydraulic and acoustic stabilization.

NH13 – Lunar Phase Regulation (Nilsson Lunar Model)

Moon cycles affected Δh, silt density, and working rhythm.

NH14 – Pyramid fields align along the Ahramat corridor because the hydraulic system required a continuous energy source.==========

5. Full Mathematical Foundations (All Formulas)

5.1 Block Volume

V=mρstoneV = \frac{m}{\rho_{\text{stone}}}V=ρstonem

Example for 80 tons:

V=80 0002600≈30.8 m3V = \frac{80\,000}{2600} \approx 30.8\, m^3V=260080000≈30.8m3

5.2 Weight Force

Fgravity=mg≈785 000 NF_{\text{gravity}} = m g \approx 785\,000\, NFgravity=mg≈785000N

5.3 Siltje Buoyancy Force

Fbuoyancy=ρsiltgVF_{\text{buoyancy}} = \rho_{\text{silt}} g VFbuoyancy=ρsiltgV ≈1350 ⋅ 9.81 ⋅ 30.8≈406 000 N\approx 1350 \cdot 9.81 \cdot 30.8 \approx 406\,000\, N≈1350⋅9.81⋅30.8≈406000N

5.4 Remaining Downward Force

Fremaining=Fgravity−FbuoyancyF_{\text{remaining}} = F_{\text{gravity}} - F_{\text{buoyancy}}Fremaining=Fgravity−Fbuoyancy ≈379 000 N\approx 379\,000\, N≈379000N

5.5 Required Lift Pressure

Contact area A=4 m2A = 4\, m^2A=4m2:

Prequired=FremainingA≈95 kPaP_{\text{required}} = \frac{F_{\text{remaining}}}{A} \approx 95\, kPaPrequired=AFremaining≈95kPa

5.6 Δh Static Pressure

With Δh = 5 m:

PΔh=ρgΔh≈49 kPaP_{\Delta h} = \rho g \Delta h \approx 49\, kPaPΔh=ρgΔh≈49kPa

5.7 Water-Hammer Overpressure

ΔP=ρcΔv≈50–60 kPa\Delta P = \rho c \Delta v \approx 50–60\, kPaΔP=ρcΔv≈50–60kPa

5.8 Total Available HALM Pressure

$$P_{\text{total}} = P_{\Delta h} + \Delta P_{\text{hammer}} \approx 105\, \text{kPa}$$

→ **HALM > Required → Lift is physically achievable.**

5.9 Quarter-Wave Resonance (1×1 Shafts)

$$f = \frac{c}{4L} \approx 69\, \text{Hz}$$

5.10 Helmholtz Resonance (Antechamber)

$$f_H = \frac{c}{2\pi} \sqrt{\frac{A}{V\, L_e}} \approx 82–85\, \text{Hz}$$

5.11 Energy per Lift Cycle

$$W = F_{\text{remaining}} \cdot \Delta h_{\text{cycle}} \approx 95\,000\, \text{J}$$

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6. Supplemental Floatation (Air / Animal Skins)

Air-filled skins or bladders (goat, ox) can add:

- stability
- extra buoyancy
- resonance absorption

Buoyancy per m³ air:

$$F_{\text{float}} = g\,(\rho_{\text{fluid}} - \rho_{\text{air}}) \approx 13\,200\, \text{N}$$

10 m³ → ~13 tons additional lift.

Not required but fully compatible with HALM.

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7. Resonance Interaction Effects

1. Reduces static friction
2. Activates silt (fluidizes it)
3. Stabilizes side buoyancy
4. Enhances pulse strength

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8. Clean-Site Principle

All temporary:

- shafts
- basins
- channels
- ramps
- supports

…were **removed and filled from top to bottom** → zero archaeological visibility today.

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9. License & Citation Requirement

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Required attribution:

> *“HALM – Hydro-Acoustic Lift Model and Nilsson Hypotheses NH1–NH14 were first formulated and published byNilsson, Jimmy G, Captain & First Mate™, Alingsås, Sweden (2025). CC BY-NC-SA 4.0.”*

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10. First Publication Declaration

This document is the **first official publication** of:

- HALM – Hydro-Acoustic Lift Model
- NH1–NH14
- Siltje Effect
- Nilsson Lunar Model
- Ahramat Hydraulic Interpretation

Authorship Priority:
Nilsson, Jimmy g

Alingsås, Sweden
2025-11-13

LEGAL NOTICE — First Publication & Priority Claim

HALM – Hydro-Acoustic Lift Model
Captain & First Mate™ – Human–AI Operational Framework
Author: Jimmy G Nilsson
Date of First Publication: 2025-11-13
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This document establishes the first public disclosure of two original intellectual works authored by Jimmy G Nilsson:

1. **HALM – Hydro-Acoustic Lift Model, including all hydraulic, acoustic, sediment-based, lunar-regulated and structural hypotheses, formulas, mechanisms and engineering interpretations — in particular:**
   – the hypothesis that hydraulic energy from the ancient Ahramat Branch was directed into the pyramid system,
   – the use of an internal back-valve to generate pressure pulses and low-frequency vibrations, and
   – the silt-jet mechanism, where sediment-rich water is accelerated through channels/nozzles to create buoyant and mechanical lift effects.

2. **Captain & First Mate™, an original human–AI interaction and leadership framework defining roles, system architecture, operational logic and methodological structure.**

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– re-using or adapting formulas
– extending, modifying or iterating hypotheses

– referencing or applying mechanisms (including Ahramat-to-pyramid water supply, back-valve operation and silt-jet dynamics)
– re-writing, summarizing or transforming text
– implementing or teaching the Captain & First Mate™ framework
– integrating HALM concepts into new theories or models

requires explicit citation of the original 2025-11-13 publication:

“Nilsson, Jimmy G (2025-11-13). HALM – Hydro-Acoustic Lift Model & Captain & First Mate™ Framework.”

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The publication timestamp verifies authorship, establishes priority, and protects all components, including but not limited to:
– hydraulic lift system and pressure logic
– water supply from the Ahramat Branch into the pyramid lift system
– sealed internal pressure-cycle architecture
– internal back-valve chambers and moving elements
– back-valve mechanics and low-frequency driver
– 3–69–82 Hz resonant structure (SBN-369)
– sediment buoyancy model and silt-jet mechanisms
– lunar timing integration
– internal vertical lifting system
– multi-basin hydraulic gradient from Aswan
– unified HALM framework
– Captain & First Mate™ human–AI role definitions
– system logic and operational method
– conceptual formulation and branding structure

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